

irregular and rare visitor, the White-winged Triller, which arrived at the Long Forest and attempted to breed.

Of course the Long Forest is not alone in supporting many avian species, especially during adverse periods such as drought. What this does illustrate though, is the importance of all small remnants for avian conservation. This book provides a perfect example of why remnants of native vegetation, even when small, should be nurtured and expanded.

The book is nicely illustrated with black and white and coloured photographs and several useful maps, and concludes with an annotated list of the 174 species recorded during the intensive surveys of 1981-2005. Historical records from 1889 for each species are also included. I enjoyed dipping into the list and quickly looked up the

woodland bird of special interest to me, the Noisy Miner. What a relief – only four records! The presence of Noisy Miners in higher numbers would certainly damage the Long Forest's usefulness as a haven for small birds.

This book will be of enormous interest not only to local natural history aficionados, but also to anyone interested in birds, woodland ecology, and avian conservation. As the authors point out, the book is 'a celebration of the Long Forest'. And what a wonderful place to celebrate! It's close to Melbourne, makes a great day trip and, if you're lucky, you might find some marvelous ornithological gems.

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Impact of the 2002/03 alpine wildfires on *Dasyurus maculatus* in East Gippsland

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Abstract

Known Spotted-tailed Quoll latrines were searched for the presence of scats after the 2002/03 alpine wildfires burnt through the upper Snowy River area in eastern Victoria. Quolls were detected only at sites that either did not burn or were patchily burnt. Quolls were still not detected in areas that were burnt intensely three years after the fires. The implications of the survey results suggest that the species could have suffered a 35-50% population decline due to the fires. (*The Victorian Naturalist* 124 (5), 2007, 313-315)

Introduction

The upper Snowy River and tributaries constitute the stronghold in Victoria for *Dasyurus maculatus*, the Tiger or Spotted-tailed Quoll, and contains more than 54% of repeat records since 1980 (Atlas of Victorian Wildlife 2006). *Dasyurus maculatus* has been studied and monitored in the Suggan Buggan Valley since 1990 (Belcher 1994; 1995; 1998; 2000; 2003; Belcher and Darrant; 2004; 2006a; 2006b). The alpine wildfires in 2002/03 burnt through the Suggan Buggan Valley, Rocky Range through to Mt Tingaringy in February 2003.

Dasyurus maculatus use latrines (communal defecation sites) to potentially mark

territory, landscape features and to denote presence and reproductive status (Belcher 1994; Kruuk and Jarman 1995). The presence of active latrines is a reliable method of determining the presence/absence of *D. maculatus*. The main latrine at Mt Stradbroke was checked in April 2003 and several burnt scats were present. A survey of known latrines in the study area was conducted to investigate the impact of the fire on the species.

Methods

Five known latrines were searched for scats to provide evidence of the species'

presence. Searches were undertaken in April 2003, February-March and October 2004, October 2005 and July 2006. The Mt Stradbroke and Hanging Rock sites were searched each year. The other sites were surveyed at least once between 2003 and 2006. Sites searched included Mt Stradbroke, Hanging Rock, Suggan Buggan Valley, Rocky Plains Creek, Langhams Bluff, Little River, Snowy River between Willis and Sandy Waterholes Track and Sandy Waterholes Track.

Presence/absence then was compared to fire intensity. Fire intensity was considered high if the crown was burnt or scorched, moderate if the understorey was burnt and low if the ground cover and shrubs were burnt.

The sites including the White Box *Eucalyptus albens* woodland on the eastern side of the Snowy River were assessed to determine fire intensity and to ground truth the DSE fire map of the area.

Results

Fire Intensity

Fire intensity was highest along the escarpment and ridge tops along the Rocky Range. The floor of the Suggan Buggan River valley was patchily burnt and fire intensity varied from low to high, depending on aspect and topography. Tributaries such as Rocky Plains Creek and especially the rocky outcrops on the eastern side burnt intensely. The Little River valley and particularly the gorge were either unburnt or lightly burnt. Similarly, much of the Snowy River valley was either unburnt or patchily burnt at low intensity. East of the Snowy River to Mt Tingaringy, most of the White Box woodland, with the exception of Gattamurah Creek, was burnt intensely.

Quoll Records

Quoll scats were found at Langhams Bluff, Little River and the Snowy River opposite Gattamurah Creek. Incidental records included a sighting on the Snowy River Rd near Gattamurah Ck (JK Rogers pers. comm.) and a trap record in the Little River Gorge (DSE records).

Quoll scats and sightings/trapping occurred at sites that were either unburnt or patchily burnt at low intensity. Sites where quolls were not recorded included

the north-facing escarpment along the Suggan Buggan Valley, which was subjected to high to extreme fire intensity.

Fire Impact

Approximately 90% of the white box/cypress pine on both sides of the Snowy River burnt intensely (DSE fire map). The only areas either unburnt or burnt patchily were sections of the Suggan Buggan Valley, Gattamurah Creek, the Snowy River valley and Little River Gorge.

Dasyurus maculatus records from the Atlas of Victorian Wildlife over the last 25 years were analysed to determine the proportion of the Victorian population recorded from the upper Snowy River area. Only locations with multiple records (>1) from specific locations were included in the analysis as these records were most likely to indicate resident rather than transient or displaced quolls. The analysis found that 54.8% of multiple records from specific sites during the last 25 years were from the upper Snowy River area. The results of the present surveys indicate that no animals survived where the fires were severe. In NSW around Jacobs River, where the fire varied from intense to patchy and the adjoining Snowy River valley was largely unburnt, 25% of the pre-fire *D. maculatus* population was recorded 3 months after the fire (Dawson 2005). Therefore the impact of the fire in the upper Snowy River on the *D. maculatus* population would be a reduction of between 67.5% if 25% survived the fires and 90% if no animals survived the fires. The impact on the state population, without taking into account the impact of the 2003 fires from the north-east through the Alps and Gippsland, would be between 37% (54.8% of 67.5) and 49% (54.8% of 90). Given the endangered status and ongoing decline in range and abundance of the species in Victoria, a sudden decline of that magnitude should be cause for immediate concern and action.

Discussion

The upper Snowy River area is the remaining stronghold for *D. maculatus* in Victoria. This is supported by the number of records over the last 25 years (Atlas of Victorian Wildlife) and the fact that it is the only area in Victoria where *D. macula-*

tus has been trapped in the last 25 years. Trapping surveys in the Otways, south-west Victoria and north-east Victoria in the last 10 years have not resulted in the capture of any quolls (Belcher 1999; DSE records).

Previous studies (Belcher 1994; Belcher 2000) had found that quolls used the escarpment and the gullies running off the escarpment extensively for movement, hunting and denning. Wildfires are typically more intense travelling up slopes than travelling down, so it was not surprising that the steep gullies and north-facing escarpment burnt intensely, while the floor of the valleys burnt less intensely or patchily.

Quolls were recorded denning in rock caves, crevices and boulder tumbles along the escarpment (Belcher 1994). The absence of quolls on the escarpment would suggest that they did not survive the fire, even though they may have been sheltering in rock dens. Quolls did survive in areas that were unburnt, patchily burnt or burnt at low intensity.

The fact that quolls and their prey were still absent from the escarpment more than three years after the fire supports the conclusion that they did not survive the fire and is reason for concern, given their nationally endangered status (*Environment Protection and Biodiversity Conservation Act 1999*) and slow rate of recolonisation.

The unburnt and patchily burnt areas of the upper Snowy River and tributaries such as Gattamurah Creek, and the Snowy River between Willis and Campbell's Knob, should be surveyed to determine the species' post-fire distribution and to enable monitoring of recovery and the rate of recolonisation. The Suggan Buggan/Rocky Range sites should be surveyed annually to monitor the species' recovery in order to assess the impact of high intensity fires on the species.

Acknowledgements

ESLink, FAME and Ecosystems Environmental Consultants provided funding for the post-fire surveys. Buff Rogers provided hospitality, local information and access through his property to the Mt Stradbroke site.

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Received 18 January 2007; accepted 20 July 2007